

Docket No. HACENA 3-1

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Hacena et al.

Application No.: 10/785,602

Group No.: 2683

Filed: 2/24/2004

Examiner: Michael Vu

For: WIRELESS COMMUNICATION NETWORK FOR PROCESSING CALL TRAFFIC
OVER A BACKHAUL NETWORK

Mail Stop Amendment

Commissioner for Patents

P. O. Box 1450

Alexandria, VA 22313-1450

RESPONSE TO OFFICE ACTION

Introductory Comments

In response to an Office action dated May 1, 2006, please enter the following amendments and consider the following remarks.

Amendments to the Claims

1. (Currently amended) A wireless communication network comprising:

a call processing system in a mobile switching center (MSC) coupled to a backhaul network;

a translator system coupled to the backhaul network and to the call processing system;

a first base station system coupled to the backhaul network, the first base station system, responsive to receiving communications for a call from a wireless communication device, transfers first call traffic for the call in a first format over the backhaul network to the call processing system; and

a second base station system coupled to the translator system by the backhaul network, the second base station system, responsive to receiving the communications for the call from the wireless communication device, transfers second call traffic for the call in a second format over the backhaul network to the translator system wherein the second format is different than the first format;

the translator system, responsive to receiving the second call traffic in the second format from the second base station system, converts the second call traffic from the second format to the first format and transfers the second call traffic in the first format to the call processing system; and

the call processing system, responsive to receiving the first call traffic and the second call traffic, processes the first call traffic and the second call traffic.

2. (Original) The wireless communication network of claim 1 wherein the call processing system, responsive to receiving the first call traffic and the second call traffic, determines if the second call traffic is delayed compared to the first call traffic.

3. (Original) The wireless communication network of claim 2 wherein the call processing system, responsive to a determination that the second call traffic is delayed, buffers the first call traffic to synchronize the first call traffic and the second call traffic.

4. (Original) The wireless communication network of claim 3 wherein the call processing system selects either the first call traffic or the second call traffic based on a quality of the first call traffic and a quality of the second call traffic.

5. (Original) The wireless communication network of claim 1 wherein the call processing system, the translator system, and the first base station system are from a first vendor, and the second base station system is from a second vendor.

6. (Original) The wireless communication network of claim 1 wherein the first format comprises a proprietary format and the second format comprises an Inter-vendor Operating System (IOS) format.

7. (Original) The wireless communication network of claim 1 wherein:

the first base station system, responsive to receiving the communications for the call from the wireless communication device, transfers third call traffic in the first format over the backhaul network to the translator system; and

the translator system, responsive to receiving the third call traffic in the first format over the backhaul network, converts the third call traffic in the first format to the second format and transfers the third call traffic in the second format to another call processing system.

8. (Currently amended) A method of operating a wireless communication network for wireless communications wherein the wireless communication network comprises a call processing system in a mobile switching center (MSC) coupled to a backhaul network, a translator system coupled to the call processing system and the backhaul network, a first base station system coupled to the backhaul network, and a second base station system coupled to the backhaul network, the method comprising the steps of:

receiving communications for a call in the first base station system from a wireless communication device;

transferring first call traffic for the call in a first format from the first base station over the backhaul network to the call processing system in the MSC;

receiving communications for the call in the second base station from the communication device;

transferring second call traffic for the call in a second format from the second base station over the backhaul network to the translator system, wherein the second format is different than the first format;

receiving the second call traffic in the second format from the second base station system in the translator system;

converting the second call traffic from the second format to the first format in the translator system;

transferring the second call traffic in the first format from the translator system to the call processing system in the MSC; and

receiving the first call traffic and the second call traffic in the call processing system and processing the first call traffic and the second call traffic.

9. (Original) The method of claim 8 further comprising the step of:

receiving the first call traffic and the second call traffic in the call processing system and determining if the second call traffic is delayed compared to the first call traffic.

10. (Original) The method of claim 9 further comprising the step of:
responsive to determining that the second call traffic is delayed, buffering the first call traffic to synchronize the first call traffic with the second call traffic.
11. (Original) The method of claim 10 further comprising the step of:
selecting either the first call traffic or the second call traffic based on a quality of the first call traffic and a quality of the second call traffic.
12. (Original) The method of claim 8 wherein the call processing system, the translator system, and the first base station system are from a first vendor, and wherein the second base station system is from a second vendor.
13. (Original) The method of claim 8 wherein the first format comprises a proprietary format and wherein the second format comprises an Inter-vendor Operating System (IOS) format.
14. (Original) The method of claim 8 further comprising the steps of:
receiving the communications for the call in the first base station system from the communication device;
transferring third call traffic in the first format over the backhaul network to the translator system;
receiving the third call traffic in the first format in the translator system;
converting the third call traffic in the first format to the second format; and
transferring the third call traffic in the second format to another call processing system.

15. (Currently amended) A wireless network controller comprising:

a call processing system in a mobile switching center (MSC) adapted to receive first call traffic for a call in a first format from a first base station system over a backhaul network; ~~and~~

a translator system adapted to receive second call traffic for the call in a second format from a second base station system over the backhaul network;

the translator system, responsive to receiving the second call traffic in the second format from the second base station system, converts the second call traffic from the second format to the first format and transfers the second call traffic in the first format to the call processing system; and

the call processing system, responsive to receiving the first call traffic in the first format and the second call traffic from the translator system, processes the first call traffic and the second call traffic.

16. (Original) The wireless network controller of claim 15 wherein the call processing system, responsive to receiving the first call traffic and the second call traffic, determines if the second call traffic is delayed compared to the first call traffic.

17. (Original) The wireless network controller of claim 16 wherein the call processing system, responsive to a determination that the second call traffic is delayed, buffers the first call traffic to synchronize the first call traffic with the second call traffic.

18. (Original) The wireless network controller of claim 17 wherein the call processing system selects either the first call traffic or the second call traffic based on a quality of the first call traffic and a quality of the second call traffic.

19. (Original) The wireless network controller of claim 15 wherein the first format comprises a proprietary format and the second format comprises an Inter-vendor Operating System (IOS) format.

20. (Original) The wireless network controller of claim 15 wherein the wireless network controller comprises a Mobile Switching Center (MSC).

Remarks

In the non-final Office Action mailed on May 1, 2006, the Examiner rejected claims 1, 5-6, 8, 12-13, 15, 19-20 under 35 USC § 102(e) as being anticipated by U.S. Patent publication 2003/0158954 (Williams), and rejected claims 2-4, 9-11, 16-18 under 35 USC § 103(a) over U.S. Patent publication 2003/0158954 (Williams) in view of U.S. Patent 5,717,737 (Doviak), and rejected claims 4, 11 and 18 under 35 USC § 103(a) over U.S. Patent publication 2003/0158954 (Williams) and U.S. Patent 5,717,737 (Doviak) in view of U.S. Patent 6,005,929 (Chemin). Claims 1, 8 and 15 are presently amended.

Applicants respectfully traverse the rejections and request reconsideration and withdrawal thereof. Claims 1, 8 and 15 are amended to better define the invention by reciting the call processing system in a mobile switching center (MSC).

§ 102 Rejection

The Examiner rejected claims 1, 5-6, 8, 12-13, 15, 19-20 under 35 USC § 102(e) as being anticipated by U.S. Patent publication 2003/0158954 (Williams). The 35 USC § 102(e) rejections over Williams are traversed because this reference does not teach the system and method of the amended claims. A proper 35 USC §102(e) rejection requires that each and every limitation of the claimed invention be disclosed in a single prior art reference. In addition, the reference must be enabling and describe the applicant's claimed invention sufficiently to have placed it in the possession of a person of ordinary skill in the field of the invention.

Claim 1 describes a wireless communication network that enables a communication device to use different base stations having different protocols, wherein the base stations are adapted to communicate with a call processing system using a different protocol than the base

station. A translator is used with at least one base station to convert the call traffic to a format that is compatible with the call processing system in an MSC.

The Applicants generally submit that Williams does not describe the same type of translation in the same place in a network as described in amended claim 1. Williams describes a radio communication system having a protocol translator that permits normally incompatible communication devices, such as fire and police walkie-talkies, to communicate with each other. The translator as described by Williams is equivalent to the translation between two people speaking different languages, such as German and English. The translator of Williams allows two mobile communication devices to communicate with each other despite the language difference. Even though similar terminology is used, there are significant differences between Williams and the pending claims. In Williams, calls are transferred from a first mobile device to a second mobile device after translation. Williams does not use translation for the benefit of backhauling call traffic from base stations to a call processing system in an MSC. On the other hand, the system of amended claim 1 allows base stations to backhaul call traffic to a call processing system in an MSC in different formats. The format of the Rf communications between the mobile devices is not the focus of amended claim 1 as it is in Williams.

In the wireless communication network of amended claim 1, a first base station transmits call traffic for a call in a first format to a call processing system in an MSC over a backhaul network. A second base station transmits call traffic for a second call in a second format not compatible with the format of the call processing system in an MSC to a translator system over the backhaul network. The first format is a format compatible with the call processing system in an MSC, whereas the second format is not compatible with the call processing system in an MSC. The translator system converts the second call traffic from the second format to the first

format compatible with the call processing system in an MSC, and transmits the second call traffic in the first format to the call processing system in an MSC. The call processing system in the MSC processes the first call traffic in the first format, and processes the second call traffic from the base station after being converted to the first format.

At least one limitation of amended claim 1 not disclosed by Williams is a call processing system in a mobile switching center (MSC) adapted to process call traffic. The Examiner asserts that paragraph 11 of Williams describes a call processing system coupled to a backhaul network. The Applicants disagree. Paragraph 11 of Williams describes a repeater station for expanding the range of the software defined translator to cover additional regions. The repeater station(s) in Williams is simply used to amplify signals received by an antenna from a mobile device, and to transport the amplified signal to the translator. The repeater station does not perform any call processing functions in an MSC, but rather extends the range of the translator and facilitates the transmission of the communication from a first mobile device to a second mobile device by amplifying signals.

Another limitation of amended claim 1 not disclosed by Williams is a translator system coupled to the backhaul network and to the call processing system, where the translator system, responsive to receiving the call traffic, converts the call traffic to the first format of the call processing system and transfers the call traffic to the call processing system. As stated above, Williams does not disclose a call processing system in an MSC, and further does not disclose a translator for converting call traffic to a format for use by a call processing system in an MSC. Further, Williams is concerned with the protocol of the Rf transmission between differing mobile devices. On the other hand, amended claim 1 describes a call processing system in a MSC adapted to process call traffic received over a backhaul network from base stations. The claimed

call processing system in an MSC is configured to process call traffic in a specified format. If a base station is utilized in the system that has a format that the call processing system in an MSC is unable to understand, then the translator translates the call traffic from a base station to a format that the call processing system in an MSC understands. In reverse direction, the translator translates call traffic from a format the call processing system in an MSC understands to a format that the base station understands (e.g., from the first format to the second format). On the other hand, the translator in Williams does not translate call traffic to a format used by a call processing system in an MSC for transporting the call. Rather, Williams discloses translating communications from a format one mobile device uses to a format used by another mobile device.

The translator in Williams is positioned between a first mobile communication device, such as a walkie-talkie, and a second mobile device. Repeater stations may be additionally positioned between the translator and the mobile devices to extend the range of the translator. By contrast, the translator in amended claim 1 is positioned between the call processing system and a base station. Thus, the translator in Williams is not implemented in the same location in the network as in amended claim 1. Another limitation of amended claim 1 not disclosed by Williams is that the translator system receives the second call traffic in the second format from the second base station system, converts the second call traffic from the second format to the first format and transfers the second call traffic in the first format to the call processing system in an MSC.

Williams operates by receiving a call from a first mobile device in a first format, such as a police band, and translates the call to a second format that a second mobile device can understand, such as a fire department band. The translator and communication network of

Williams is positioned between the mobile devices to serve communication signals of different formats between the first or second mobile device. The translator in Williams generates a format for use by either mobile device, and does not generate a format for use by elements along the backhaul network, such as a call processing system in an MSC. For the reasons stated above, Williams does not teach that the translator system receives the second call traffic in the second format from the second base station system, converts the second call traffic from the second format to the first format and transfers the second call traffic in the first format to the call processing system in an MSC.

Based on the above remarks, the Applicants submit that Williams does not anticipate claim 1 because it does not describe each and every element of the amended wireless communication network of claim 1. The same arguments apply to claims 2-20.

§ 103 Rejection

The Examiner rejected claims 2-4, 9-11, and 16-18 under 35 USC § 103(a) over U.S. Patent publication 2003/0158954 (Williams) in view of U.S. Patent 5,717,737 (Doviak). The Examiner rejected claims 4, 11 and 18 under 35 USC § 103(a) over U.S. Patent publication 2003/0158954 (Williams) and U.S. Patent 5,717,737 (Doviak) in view of U.S. Patent 6,005,929 (Chemin).

The 35 USC § 103(a) rejections are traversed because these combination of references do not describe or enable all of the limitations of claims 1, 8 and 15, on which claims 2-7, 8-14 and 16-20 depend on. In regard to this argument, the arguments identified above in the 35 USC § 102 rejection are restated.

Conclusion

For the reasons provided above, the Applicants submit that claims 1-20 are allowable over the art cited by the Examiner. The Applicants respectfully ask the Examiner to reconsider his position in view of the above remarks, and allow the pending claims.

Respectfully submitted,

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SIGNATURE OF PRACTITIONER

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